

WHAT IS CLAIMED IS:

1. A paper supply device comprising:

a paper supply roller that rotates in the sheets of paper

5 supplying direction;

a separation roller that holds the sheets of paper jointly with the paper supply roller and always maintains a driving force in the direction reverse to the paper supplying direction by the paper supply roller; and

10 a weight to press fit the paper supply roller to the separation roller by applying a required load to the paper supply roller.

2. The paper supply device according to claim 1, wherein the weight is mounted on the same shaft of the paper supply roller

15 coaxially.

3. The paper supply device according to claim 1, wherein the paper supply roller is connected to a driving mechanism for rotating in the sheet paper supplying direction at one end of the shaft and

20 press fits to the separation roller using one end of the shaft as a revolving point.

4. The paper supply device according to claim 1, wherein the separation roller retains the driving force in the direction reverse to

25 the paper supplying direction via a torque limiter.

5. A paper supply device comprising:

a paper supply roller that rotates in the sheet paper supplying direction;

5 a separation roller that holds sheets of paper jointly with the paper supply roller and always retains a driving force in the direction reverse to the paper supplying direction by the paper supply roller;

10 a weight that applies a required load to the paper supply roller and press fits the paper supply roller to the separation roller by the applied load; and

an elastic member that press fits the paper supply roller to the separation roller by applying the compression force to either the paper supply roller or the separation roller.

15 6. The paper supply device according to claim 5, wherein the elastic member presses the paper supply roller to the separation roller side, and the paper supply roller is press fit to the separation roller by a load applied by the weight and the pressure of the elastic member.

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7. The paper supply device according to claim 6, wherein the weight is attached to the same shaft of the paper supply device coaxially.

25 8. The paper supply device according to claim 6, wherein the paper supply roller is connected to a driving mechanism for rotating

in the sheet paper supplying direction at one end of the shaft and is press fit to the separation roller using one end of the shaft as a revolving support point.

5           9. The paper supply device according to claim 6, wherein the separation roller retains a driving force in the direction reverse to the paper supplying direction via a torque limiter.

10           10. The paper supply device according to claim 6, wherein 1/2 of the press fitting force to fit the paper supply roller to the separation roller is produced with the own weight of the paper supply roller and the weight, and the remaining 1/2 is produced with compression force of the elastic member.

15           11. An image forming apparatus comprising:  
an image carrier;  
an image forming unit to form a toner image on the image carrier;  
a transfer unit to transfer the toner image on sheets of paper;  
20           a paper supply roller to revolve to feed paper in the direction of the transfer unit;  
a separation roller to always retain a driving force in the direction reverse to the paper supplying direction by the paper supply roller; and  
25           a weight to apply a required load to the paper supply roller and press fit the paper supply roller to the separation roller by the

applied load.

12. The image forming apparatus according to claim 11,  
wherein the weight is attached to the same shaft of the paper supply  
5 roller coaxially.

13. The image forming apparatus according to claim 11,  
wherein the paper supply roller is connected to a driving mechanism  
for revolving at one end of the shaft in the paper supplying direction  
10 and press fit to the separation roller using one end of the shaft as a  
revolving support point.

14. The image forming apparatus according to claim 11,  
wherein the separation roller retains a driving force in the direction  
15 reverse to the paper supplying direction via a torque limiter.